## ABSTRACT

Temperature of the disk drive is measured using components of the disk drive without the need of including a separate temperature sensor to optimize performance of the spindle motor during startup. To measure temperature, the resistance of the VCM winding is measured and used to estimate the spindle bearing temperature. Back emf is measured from VCM windings and used during startup to accurately determine actuator position. Because the VCM coil resistance varies significantly with temperature, coil resistance variations with temperature are determined to enable compensation for inaccuracies in determination of actuator velocity. This inferred temperature is then used to optimize the start up procedure for the spindle motor to accommodate the increased frictional loading of the spindle bearing. In this way an improved performance in the reliability and spin up operation time can be realized without the addition of a separate temperature measurement hardware element.